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### **A Precision Measurement of the $\eta$ Radiative Decay Width via the Primakoff Effect**

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The GlueX detector in the experimental Hall-D at Jefferson Lab provides a unique capability to perform a measurement of the  $\eta \rightarrow \gamma\gamma$  decay width via the Primakoff effect with the precision significantly better than all existing collider and Primakoff results. The experiment will measure differential cross sections of  $\eta$  mesons at forward angles on a liquid hydrogen and  $^4\text{He}$  targets using a beam of tagged photons, which will be used for the extraction of the decay width. The measurement is essential for the determination of the fundamental properties such as the ratios of the light quark masses and the  $\eta$ - $\eta'$  mixing angle, and will provide an important test of chiral symmetry breaking in QCD. The experimental results will also allow to significantly reduce uncertainties on partial widths of all other  $\eta$  decays. We will give an overview of the PrimEx-D physics program and experimental setup.